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Women's use of medicinal plants for their reproductive health in Las Minas, Panama

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Women's use of medicinal plants for their reproductive health in Las Minas, Panama

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CHAPTER 1. INTRODUCTION

Introduction

The use of medicinal plants has been going on since the dawn of humans. Starting with Theophrastus, who wrote expansively about plants and recorded many observations regarding them, written records of medicinal plants are seen in Europe (Balick, Cox 1996). Later Pedanius Dioscorides, a Greek physician of the first century, wrote a compendium called *De Materia Medica*, which describes and illustrates five hundred medicinal plant species. There are also extensive written records of medicinal plant use in China. Shen Nung, a Chinese emperor, compiled the *Pen Tsao*, which is possibly the earliest known book relating to herbal medicines in the world (Balick, et. al. 1996). Interest in medicinal plants did not wane until the 1930's when synthetic chemistry flourished. Humans were no longer completely reliant on the natural world. However, even though humans now have the ability to create active compounds, they are unable to create many of the intricate phytochemical compounds that angiosperms and other types of plants have been perfecting for approximately 130 to 140 million years (Raven, Evert, and Eichhorn 1992). This realization on the part of scientists and pharmaceutical companies has caused a major resurgence in the search of naturally healing compounds (Plotkin 2000). It is also important to note that, although many people rely solely on synthetically derived pharmaceuticals, there are a large number of people that still depend on medicinal plants as a part of their health care (Balick 2000).

According to a mid-1990's estimate by the World Health Organization, approximately 3.5 billion people in the developing world utilize plants as components of their primary health care (Balick and Cox 1996:57-58). The U.S. Census Bureau (2002)

estimated that there were approximately 6 billion people in 1995, which means almost 60% of the world's population continues to use plants as a part of their primary health care. With such a large percentage of the population continuing to utilize medical plants, it is apparent that traditional medical care practices are important health care components for the majority of the world.

Medicinal plant use is a very important sector of health care in countries all over the world for various reasons. A large number of people in parts of Europe and Asia continue to use herbal remedies because of their long standing tradition, even though medical technology and pharmaceuticals are readily available to them (Balick, et. al. 1996). Unlike European and Asian countries, many of the people living in the United States and Canada do not have a recent tradition of alternative therapy use. However, an increasing number of the populace is embracing alternative health solutions due to the holistic health movement that has been developing since the 1970's (Miles 1984:125). In rural areas of countries such as India, Africa, China, Indonesia, and Latin America, medicinal plants take on an entirely different role than they do in industrialized countries. These plants transition from an "alternative", in the more industrialized regions of the world, to a primary source of health care in many rural regions (Balick, et. al. 1996). In rural areas of Latin America it is difficult to find a house that does not have a small patch of land devoted to growing medicinal plants. Even in larger cities in Latin America there are urban markets that sell dry herbs purchased for their medicinal value.

Time and the continuing destruction of our earth's biota is severely taking its toll on the earth's species. Everyday we are losing more and more potentially valuable species that could be the key to curing any number of devastating diseases that plague people. Another

reason why the loss of these extremely rich habitats is disturbing is because many of the indigenous groups that once resided in these environments have also become extinct which has lead to the loss of indigenous knowledge, along with the many other species of plants and animals. Locating and identifying plant species people rely on for their health and working to conserve these species is very important for the future health and survival of the inhabitants of this earth.

In the spring of 2000 I did some survey research for an independent study near the small towns of Guacimo and Pocora, which are situated in the Atlantic Coastal region of Costa Rica. I found that several people living in that area were still using medicinal plants for the majority of their health care needs even though modern medical facilities were present in the region.

Carole Browner, a social anthropologist at the University of California, Las Angeles, had similar results in her research on plants used for reproductive health in Oaxaca, Mexico. She found that "despite the availability of modern medicines, herbal remedies are strongly preferred for use during all phases of the reproductive cycle and for the treatment of all female reproductive health problems" (Browner 1985b:492). She also emphasized that the preference for traditional remedies is not unique to the community she studied and that throughout much of the developing world there is a preference for traditional medicines (Browner 1985b:492).

This particular study stems from my previous research and my interest in Carole Browner's work. It focuses on medicinal plant used to treat female reproductive health problems in rural Panama. The purpose of this study is to look at health care availability and individual health care choices to determine what forms of health care are being utilized and

why. The study examines women's reproductive health in Las Minas, a small town in rural Panama, and focuses on five major themes.

The first theme is 'medical systems', which are the various frameworks for understanding health, illness, and disease, and the role they play in health care. A thorough understanding of the various options available regarding medical systems is important as a preliminary step in determining why people choose treatments within certain medical systems.

The next theme is conceptualization of health and how that influences an individual's maintenance of health. This theme is essential to understanding why various medical systems are chosen because individual conceptions of health are culturally relativistic and tend to vary from group to group. A group is not likely to adopt a medical system if it does not fit within their preexisting culturally-based ideas regarding health and illness.

The third theme looks at some of the factors, cultural, social, economic, and political, which play a role in the medical choices individuals make. I am looking at health choices from a relativistic perspective. This means that everything occurs within a context and is influenced by that context (Hollis and Lukes 1982:6). I have decided to focus on the social, cultural, economic, and political factors because these variables play a key role in determining the function of various medical systems within different groups of people.

The fourth theme is medicinal plant use and women's reproductive health. This theme explores the research done on use of medicinal plants in various regions of the world; in particular I focus on the studies that have been done on medicinal plant use for women's reproductive health.

The last theme is based on changes over time that impact the previous three themes. Culture change is one of the most important variables in determining why people make the medical decisions they make. It does so by showing what components of newly introduced medical systems are accepted or rejected by different groups of people. Another important result of looking at culture change is, through examining what aspects of the traditional medical system are maintained and what are lost it is possible to determine what are the most important components utilized from various medical systems in order to create a more cultural sensitive health care system that is tailored to individual group's wants and needs.

This type of research is significant because approximately half of the world's population is women and all of these women deal with reproductive issues throughout the course of their lifetimes. Not only are women impacted by their reproductive health, but so are men because healthy women are essential for successful procreation. Another significant component of this study is understanding the relationship between women's use of traditional medical practices and women's use of biomedical systems in order to get a better understanding of the positive and negative 'Western' influences on health care in rural Panama. In the future this research could possibly be used to create a development model for rural health care that would combine biomedical and traditional health care systems creating a more effective health care system that can be utilized by everyone.

Research Setting

Panama is a unique country for many reasons. It is best known for its strategic geographic position (see figure 1). In geography classes in the United States, students learn to place Panama in Central America because it shares its northern border with Costa Rica and geographically it is shaped more similarly to the Central American countries. However, most

Central Americans and Panamanians would describe Panama as being located in South America because until 1903 it was part of Colombia when it then seceded from that country with support from the United States (CIA World Factbook 2002).

Interestingly, geographically Panama is actually located in both North and South America because the Isthmus of Panama, which connects the two continents, bisects the country. In 1903, after Panama seceded from Colombia, its leaders signed a treaty with the United States to construct a canal and to create a strip of land on both sides of the canal that would be sovereign for the U.S.

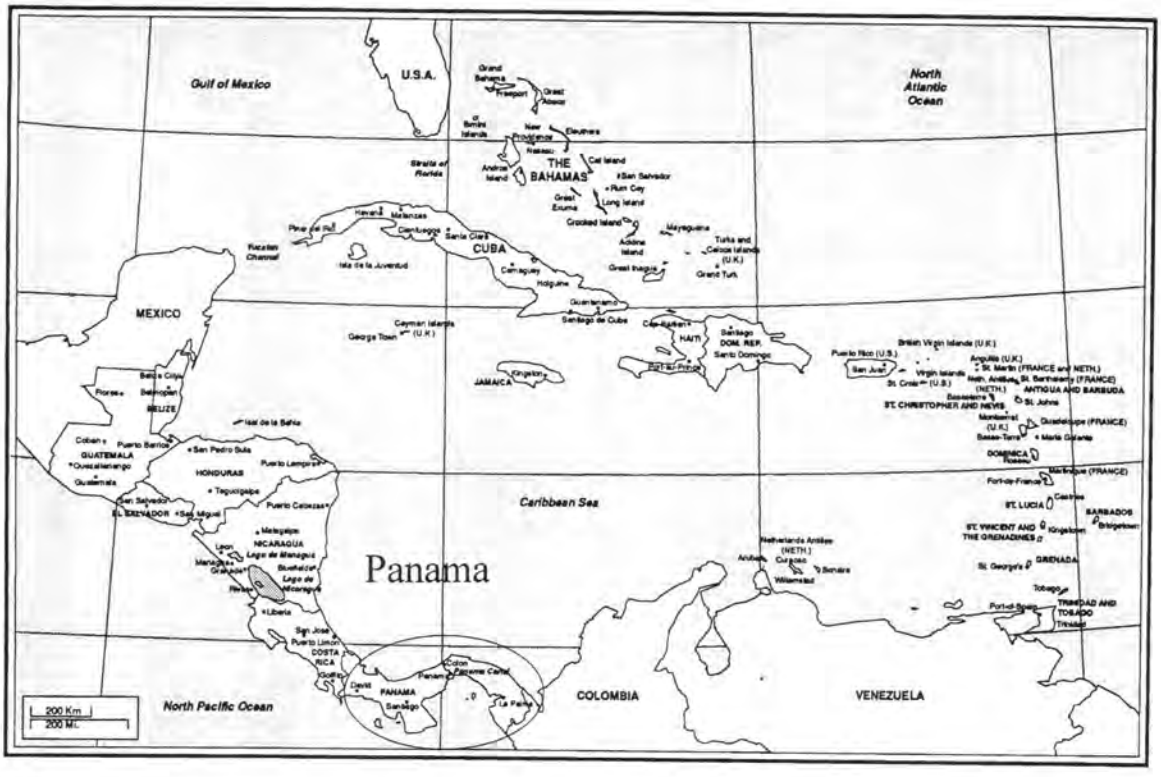

Figure 1: Map of Central America and the West Indies

The US Army Corp. of Engineers constructed the Panama Canal between1904-1914. Once completed, ships for the first time ever were able to cross from the Atlantic Ocean to

the Pacific Ocean without having to travel around the tip of South America. This saved shipping and passenger vessels large quantities of time on their journeys to various parts of the world. On December 31, 1999, Panama gained complete control of the Canal Zone from the United States.

The best known city in Panama is its capital city, Panama City. Approximately one-quarter of the country's population resides within the city and another one-quarter of the population lives in the rest of the province (Lonely Planet 2002). Seeing Panama City from the air at night is incredible because of the vast expanse of lights. Unlike the more modest sized buildings found in nearby capitols of Managua, Nicaragua, and San José, Costa Rica, Panama City has enormous skyscrapers similar to New York, Chicago, or any other major metropolitan city. One reason Panama City is able to sustain skyscrapers and Managua and San José cannot is because it is located in an area with very few problems regarding natural disasters. There is only one volcano in Panama, Volcán Barú, which is located near Panama's border with Costa Rica, and other natural disasters, such as hurricanes which wreak havoc throughout much of Central America, are not prevalent in this region. Not only does the city have skyscrapers similar to other metropolitan cities, it also has the large amounts of traffic which are often a result of high population density.

I conducted my research in a small town called Las Minas which is approximately 190 miles northwest of Panama City in the Peninsula of Azuero (see figure 2). The trip took about four hours by bus to Chitré, the capital of the province of Herrera, and then approximately another hour by car or minibus to Las Minas. Most of the trip from Panama City to Las Minas is spent traveling north on the Pan American Highway. During this portion of the trip the terrain is fairly flat with a gorgeous view of the Central Mountain

Range to the east and the Gulf of Panama, which continues into the Pacific Ocean, to the west. The view of the Gulf of Panama continues even after turning off the Pan American Highway and heading west along the coast of the Peninsula of Azuero to Chitré. This region is not terribly picturesque as the landscape is fairly dry due to hot daytime temperatures hovering near 80 degrees Fahrenheit and little rainfall for most of the year. After arriving in Chitré, it is again necessary to travel north into the interior of the peninsula. The landscape begins to change from dry and desert-like to green rolling pastureland and large Teca tree plantations[1]. The altitude continues to increase once leaving Chitré until arriving in Las Minas, which is at approximately 1,312 feet.

Figure 2: Map of Panama

Las Minas is a small town surrounded by pine trees and pastureland. It has a beautiful view of a valley to the east and slightly taller mountains to the west. Las Minas is

[1] This is a tree grown for its lumber that is used for furniture.

the head of the district of Las Minas and is also the largest town in the district with 2,213 inhabitants (Panamanian Census 2000). Its strategic location right off of the main road, which bisects the region makes it an easy one-hour trip from both Santiago and Chitré, the closest major cities. The land area of the town is approximately 22 square miles (Panamanian Census 2000) and I counted 366 houses within its borders.

Layout of the Town

Arriving at the outskirts of the town, the first thing one sees is a large open-air bar and dance club; once passing the bar the density of houses increases dramatically (see figure 3). The next landmark is the only gas station in Las Minas, which is situated on the corner of the main road from Chitré and one of the roads that leads to the center of the town. On the road leading toward the center of town there are several modest one-story homes made out of cement blocks painted in various colors. The temporary health center (they are remodeling the other one) is on the left and closer to the center of town there are a few small grocery stores and government building scattered throughout the houses. The center of town is dominated by the large Roman Catholic Church in the center of the long narrow plaza. Much of the rest of the plaza is covered with grass, trees, and benches which are normally occupied by several people. The district office that houses the mayor, the post office, and the police is also located in the center of the plaza. Around the edge of the plaza are a couple of restaurants, a bar, three small grocery stores, a private pharmacy, the elementary school, a basketball court, the town library and the district's Magistrate's court along with numerous houses. There are several streets radiating out of the central plaza, leading to more houses, grocery stores, and government buildings.

Las Minas is a community that in many respects mirrors the general description of Latin America so often taught in introductory courses on Latin America. This can be seen in the town's economics, politics, health care, religion, environment, and social and cultural characteristics.

Figure 3: Map of Las Minas

Economics

Agriculture contributes the largest number of jobs to the residents of Las Minas. The latifundio systems of land ownership and management that have traditionally been found in Latin America are still present in Las Minas. The latifundio system is characterized by a few

relatively wealthy landowners controlling the vast majority of land in an area and hiring workers at low wages to work the land (Whiteford and Whiteford 1998:4). The latifundio system is played out in just that way in the district of Las Minas. Many of the hired workers work eight-hour days doing back breaking labor while earning $6 a day. Like latifundistas elsewhere in Latin America, the majority of the landowners do not live in Las Minas; instead they reside in larger cities, such as Chitré or Panamá City, where they can enjoy the modern amenities such places offer. Many landowners only visit rural Las Minas occasionally to check on their land.

Agriculture and cattle ranching are the most common 'industries' in the area surrounding Las Minas. In this region farmers have two full growing seasons during the eight months of the rainy season which starts in April or May and runs through December or January. During the four months of summer there is not enough rain to sustain crops. Several types of crops are grown in the region include rice, corn, sugar cane, tomatoes, several kinds of peppers, cucumbers, lettuce, melons, mangoes and papayas. There are also plantations of Teca (*Tectona grandis*), a type of tree that is grown to sell for wood to make furniture and other wood products. Teca is native to Polynesia and Asia but it was brought to Panama 70 years ago by people who liked to collect exotic plant species. Approximately 20 years ago Panamanians began exploiting it for its wood. In addition cattle production for the sale of the milk and meat is one of the most common uses of land in the area. Most people also raise chickens but they are more for subsistence use in contrast with the cows which are raised for market sale.

Aside from Latifundio agriculture there are very few other work opportunities. There are no industries in this area and there are few commercial opportunities. Tourism in this

region of Panama is not a factor, most likely due to the lack of infrastructure and interesting tourist sites. Although a group in Las Minas is trying to increase tourism to the area. Some of the few other options for employment for men living in Las Minas are driving a bus, owning and running a small business, working for a government institution or teaching. For the women the job choices are even more limited; approximately 75% of the women I interviewed are housewives. The other 25% worked as teachers, secretaries, nurses, storekeepers, and cooks in restaurants. Of the various employment options, teaching was by far the best paying job in the area, especially for women.

Politics

Politics, as in most of Latin America, also plays a very important role in understanding life in Las Minas. One reason for that is the strong tie between politics and employment. Las Minas is a small community with few job opportunities. Because Las Minas is the district head there are several government buildings located within the town proper and some of the best jobs available in the area are with these government affiliates. Not only is the Magistrate's court and the district mayor's office located there but there is also the Personaria Municipal (The Office of the City Attorney), the Autoridad Nacional del Ambiente (The National Authority of the Environment), and the Ministerio de Desarollo Agropecuario (The Ministry of Agricultural Development). These jobs are extremely unstable. If a person is employed by a government agency, he (or she) is subject to losing his (or her) job every time their political party is voted out of favor. One example of this is in the mayor's office, an elected position in Las Minas. The last mayor decided to have a different secretary every year of his term. His reasoning was he felt it would help more people economically. That situation was a little unusual, because most secretarial positions

are changed after every term, not every year. Either way the position of secretary is short term for the person being employed in that position. Politics is important in Las Minas because it influences many residents' ability to maintain steady employment.

The Magistrate's Court deals with legal issues that occur in the district of Las Minas, including civil marriages, divorces, and child support in the case of divorced or separated couples with children. It also works with property issues such as land disputes over boundaries and property damage. It notifies people who have been accused of a crime about their court dates.

The Office of the City Attorney works closely with the police and the Magistrate's Court to make sure that law and order is maintained in the district of Las Minas. Its job is to investigate charges of crime and then write up their findings and send them to the district attorney's office in Chitré. The office works with crimes such as robbery, domestic violence, seduction, personal injury, stalkers, homicides, and any other major crime that takes place in the district. An employee in the Office of the City Attorney informed me that in the year 2001 they had 36 cases of crime. The majority of cases were domestic violence; the second most frequent cases were fighting. There were very few robberies, and no cases of drug selling or use. The same worker told me there was also a fair amount of problems with under-aged (13-18 years old) sex; if the couple is caught and reported by a community member or the police they are required to get married or go to prison.

The National Authority of the Environment (ANAM) is the regulator of conservation of the natural resources of Panama. In order to realize this it has several objectives as a part of its mission statement. These objectives were outlined in a conversation by a local agricultural extension worker. The first objective is to investigate and identify all of the

natural resources of Panama, including the flora and fauna. The next goal is to protect the resources. Third, ANAM is trying to gain control over the population's use of the resources. Its fourth objective is to educate the people about natural resources through providing them with free seminars and celebrations they can attend. Next, ANAM promotes ecotourism in the area. Last, it strives to develop and plan projects with qualified personal.

The Ministry of Agricultural Development (MIDA) focuses on food production by working with agriculture and livestock. This information was also outlined in a conversation by a local agricultural extension worker. MIDA has an extension program where it works with farmers in the community to help improve their production by giving them technical and financial assistance. It teaches better ways to utilize the soil, proper agrochemical usage, and alternatives for all sectors in the food production system. MIDA also has research programs where it tests information it gives to the farmers. MIDA is also in charge of sanitation at the borders. In other words, its job is to make sure no unauthorized foreign plant or animal species enter the country.

Health Care

Latin America is a region with a diverse history in health care. Until recently many rural regions in Panama were mostly comprised of traditional medical systems focusing on herbal remedies. Now biomedical facilities are working their way into even the most rural of areas. Many of the people in these regions have adapted to this by creating a holistic medical system that includes both traditional and biomedical practices. Las Minas is one such rural community that has incorporated biomedical health care into its traditional health care practices resulting in a pluralistic medical system. Many people continue to use medicinal plants at home to treat minor aliments, while seeking professional help at the health care

clinic in Las Minas or the regional hospitals, located in Ocú or Chitré, for more serious problems.

Religion

Another example of how Las Minas mirrors traditional Latin America is the strong presence of the Roman Catholic Church in the community. One of the two Catholic priests from Colombia told me that approximately 80% of the families still profess their faith to the Catholic Church. The church itself stands like a beacon in the central plaza of town making known its presence with the sound of its bells chiming before Mass every evening. Las Minas, like many Latin American towns, has its own patron saint, Santa Barbara. The largest festival in Las Minas is held in honor of Santa Barbara on December 4th, when they have a processional in which a replica of Santa Barbara is paraded around the center of town with the members of the church following.

Even with the strong Catholic presence, Evangelical Protestant religious influences have been able to make slow inroads into the community of Las Minas. There were two Evangelical churches in Las Minas; originally there was just the Assembly of God but some of the members from that congregation disagreed with aspects of the church and split off to form a Quadrangular church. One woman who converted from Catholicism to Assembly of God told me that some missionaries from the United States came and taught her about their religion and she liked it better because they study the bible more.

Environment

Like much of Latin America (Edelman 1998: 391), the area surrounding Las Minas has suffered extreme environmental degradation due to increased cattle production. Deforestation has led to a large loss of native animal and plant species and a noticeable loss

in rainfall. The Panamanian government attempted to instate a reforestation project but the results were largely unsuccessful, partially due to the fact that they were promoting the planting of pine trees, which are a non-native species, and partially because of low interest in the project from the people living in the region. The planting of non-native species has become almost as detrimental to the region as the deforestation itself. The Teca and pine trees that have been planted in the region have not resulted in a return of native animals, birds and insects species because these creatures are not adapted to these non-native tree species. Some other ill effects of growing Teca in the region are that it draws the nutrients out of the soil and causes a lot of erosion. I was told by a forestry student at the Universidad Santa Maria la Antigua[2] that the only way to make land useable after Teca is grown is by removing all of the roots, because the tree has a re-growth mechanism, covering the area with compost, and leaving the land for one hundred years to give the soil time to rejuvenate.

The temperature in Las Minas is a mixture of hot days and cool nights. Students from USMA noted the average maximum temperature between April and June was 98 degrees Fahrenheit and the average minimum temperature was 66 degrees Fahrenheit. Several individuals stated that the temperature is much higher now then it was 20 years ago. They felt that this is due to the deforestation.

Summary

This research stems from the figures from the World Health Organization, my previous research with medicinal plants in Costa Rica, and Carole Browner's research with women's use of medicinal plants to treat their reproductive health problems in Oaxaca, Mexico. In all three cases medicinal plants are continuing to be used regardless of increasing

[2] A Catholic University with a branch in Las Tablas.

availability of biomedical facilities. Hence, the major question to be grappled with in this research is why do large numbers of people continue to use medicinal plants when they have access to other forms of health care? This question was developed into a research project that focuses on women's use of medicinal plants for their reproductive health.

The research was broken down into five major concepts that play a principal part in answering the research question. Those five concepts are medical systems, conceptions of what constitutes 'health' in various areas of the world, medical-decision making, medicinal plant use for women's reproductive health, and culture change. This research was done in Las Minas, a rural town in the Azuero Peninsula of Panama, during June and July of 2002.

CHAPTER 2. LITERATURE REVIEW

Introduction

My literature review is divided into five parts. I begin by defining various medical systems and the function they play in health care in different areas of the world. Then I move to how people conceptualize health and how that influences their maintenance of health. Next I decipher which factors (social, cultural, economic, and political) play a role in the medical choices individuals make. In the fourth section I discuss the use of medicinal plants in various regions of the world and the studies that have been done on medicinal plant use for women's reproductive health. In the final section of the literature review I focus on how changes occur regarding medical systems, cultural concepts of health and illness, and treatment choices.

Medical Systems

Medical systems are important to define in any study dealing with health because they are the institutional frame of reference used to develop social institutions, etiological theories, and therapeutic techniques that allow individuals to cope with disabilities resulting from illness and disease (Foster and Anderson 1978:31). The same authors define medical systems as "culturally based behavior and belief forms that arise in response to the threats posed by disease" (1978:33). Baer, Singer, and Susser (1997:7) also have a definition for medical systems that complements that of Foster and Anderson's: "All medical systems consist of beliefs and practices that are consciously directed at promoting health and alleviating disease". Both of these definitions emphasize the role of cultural beliefs and practices in defining medical systems within different societies.

Throughout the world there are various types of medical systems. Some of the best known are the allopathic, Ayurvedic, traditional Chinese medicine, homeopathy, and indigenous medical systems. The differences among these various medical systems are mostly related to how they define health and illness, which in turns affects how the various illnesses are treated. Ayurvedic medicine is practiced in India and worldwide. Ayurvedic practitioners believe that "the key to health is to live in balance with all of nature" (Swerdlow 2000:20). "Ayurveda emphasizes that medicine must focus on the whole person, and not simply on symptoms (Swedlow 2000:20)." Treatment often consists of a combination of things including changes in eating and sleeping habits and prescription of medicinal plants (Swedlow 2000:20). Traditional Chinese medicine, like Ayurveda, has a history that is thousands of years old. This medical system originated in China but has spread to other areas of the world over time. "The emphasis of Chinese medicine is on prevention (Swedlow 2000:37)." Treatments vary from patient to patient and "can include acupuncture, massage, change in diet, and medicinal herbs" (Swedlow 2000:37). Homeopathy has a much shorter history than Ayurveda or Chinese medicine; it was developed in the early 19th century by a German physician (Patel 1987:670). In homeopathy the patients are given extremely small doses of substances from plants, minerals, and animals that in large doses would cause the same symptoms the patients are experiencing. The idea is that the introduced substance will "arouse a person's natural healing response" (Ullman 1988:43). Ayurveda, traditional Chinese medicine, and homeopathy are all fascinating medical systems however, in this study I will be focusing on allopathic and indigenous medical systems because those are the two that are utilized in Las Minas, Panama.

Indigenous, traditional, or folk medical systems emphasize a holistic approach to healing by recognizing the interdependence of the natural and supernatural worlds, society, and the individual (Worsley 1982:317). Treatment techniques used by curers in this system focus on a holistic approach that treats not only the illness but also the social factors that influence the patient's health (Anderson 1992:68). In other words, traditional medical systems are able to heal the impact the illness may have on the patient's social relationships with other people (Dawson, Gifford, Amezquita 2000:52).

A good example of an illness that has social implications in the United States is HIV. Not only does an individual with HIV have to deal with the physical health problems that are a result of the illness but they also have to deal with a change in their social relationships with other people. One example of a change in social relations is people might assume the individual diagnosed with HIV is homosexual because HIV was associated with homosexuality in the past and they might treat them differently because of their personal views of homosexuals. Another way social relations may change in this situation is some people might treat a person with HIV differently for fear they may catch the illness from him (or her).

Another unique aspect of traditional medical system's holistic approach to health care is the position of the curers within the system. The curers have an understanding of cultural values and social norms of the society in which the patient functions because they also live within that society (Worsley 1982:317). This special position of the curer gives him (or her) access to the role of the patient within the community (Worsley 1982:317). This allows the healer to diagnose and treat the patient based on both physical and social factors related to the patient's health problems. A second important attribute of traditional healers is their

ability to work within the realm of both the supernatural and the natural world to produce cures for sick patients. Shaman are an example of traditional healers with that ability; through the use of hallucinogenic drugs, they are believed to be able to interpret the reality of the supernatural, thus allowing them to cure any sickness that may have been caused by supernatural intervention (Baer, et. al. 1997:8). The effectiveness of traditional curers is partially a result of their ability to work within the realm of the natural and the supernatural because this allows them to cure a large number of illnesses that curers who only work within one realm would not be able to treat.

Unlike traditional medical systems which emphasize a holistic approach to health care, allopathic or biomedical systems are characterized by their separation of the natural world, the supernatural world, society, and the individual (Worsley 1982:317; Anderson 1992:67-68). Biomedical systems primarily emphasize disease and illness in regards to treatment (Anderson 1992:67; Dawson, et. al. 2000:52). Allopathic medicine or biomedicine is defined as "the application of the principles of the natural sciences and especially biology and biochemistry" (Merriam-Webster Dictionary 2003). Even though biomedicine is far removed from its environmental constituents, it is important to remember that culture still plays a large role in biomedicine, like all other medical systems, by providing a framework within which it must operate (Baer, et.al. 1997:8). Some of the most influential cultural constructs in medicine include kinship, politics, economy, and religion (Baer, et. al. 1997:8).

Unlike the curers in traditional medical systems who are extremely connected to their patients and the environment in which their patients belong, biomedical curers are normally far removed from their patients. Typically the biomedical doctor is given a limited amount of information from the patient at the time of contact regarding the perceived illness. In

some cases the biomedical doctor may have additional information about the patient from previous visits but not to the extent that traditional medical practitioners have regarding their patients. Even though biomedical doctors do not have the extensive social information about their patients, their medical treatment decisions are still influenced by social variables such as the ethnicity, gender and class of their patients. Depending on what cultural norms there are regarding interactions between members of different social groups there can be a huge disparity between how patients are treated (Whiteford, L. 1996). Another difference between traditional and biomedical curers is that, unlike traditional curers, biomedical curers are limited because they only work within the natural world therefore they are unable to treat any medical conditions in the realm of the supernatural world, which can include conditions ranging from heartbreak to witchcraft (Worsley 1982:334).

Many societies include bits and pieces from various medical systems when diagnosing and treating illness; this is called medical pluralism. According to Bhasin (1997:43) "Medical pluralism may be defined as the synchronic existence in a society of more than one medicine system grounded in different principles or based on different world views". A clearer understanding of the dynamics of medical pluralism can be reached by outlining the three levels of medical systems based on Dunn's (1976) cultural and geographical model. The first type is the local medical system which can be defined as the traditional, folk or indigenous medical system used by small-scale farmers or peasants, foraging, horticultural or pastoral communities. The second type is the regional medical system which are systems distributed over a relatively larger area that is not defined by the state. Some examples are traditional Chinese medicine and Ayurvedic and Unani medicine in South Asia. The last type is the cosmopolitan medical system which refers to the global

medical system otherwise known as biomedicine, 'scientific' medicine, 'modern' medicine, or 'Western' medicine. Complex societies normally have a pluralistic medical system where all three types of medical systems exist and the patients are continuously moving between the three types and between the agents involved in the different systems (Worsley 1982:324).

Every society has its own combination of medical systems that is based on its cultural belief system. At the national level there are no medical systems that are only defined as traditional but there are some countries with long histories of traditional medical systems that recognize them equally with biomedical systems (Pedersen and Baruffati 1989:488; Foster, et.al. 1978:46). Nationally recognized pluralistic medical systems are predominantly found in Southeastern Asian countries and China (Pedersen, et. al. 1989: 488). Historically in Latin America there has been much less acceptance of traditional medical systems than found in Asia; throughout Latin America's written history there have been many powerful people who have tried to eradicate indigenous medical ideologies, practices and materia medica (Pedersen, et. Al. 1989: 488). Fortunately, in recent years there has been a resurgence of interest in traditional medical practices and there have been initiatives by several groups to promote the incorporation of indigenous medicine into national systems (Pedersen, et. al 1989:488). Today, Latin American countries are predominantly classified in the mid-range of the medical system spectrum with a co-existence of an array of medical systems; in other words Latin American medical systems are dominated by medical pluralism (Baer, et. al. 1997:9).

Understanding of Health, Illness, and Disease

Medical systems can be broken down into two major categories: the health care system and the disease theory system. Health care systems are social institutions established

to foster interaction between a patient and a healer (Foster, et. al. 1978: 37). These can vary widely depending on the medical system. A traditional medical care system may only incorporate the patient and the curer while a biomedical health care system will normally incorporate several participants, including at the very least, a doctor, a nurse, a receptionist, and a patient. A pluralistic medical system will include any combination of actors in the various medical care systems depending on the treatment choice of the patient.

Disease theory systems, the second division within medical systems, are used to culturally define health and illness and provide explanations for their causes and effects (Foster, et. al. 1978:37). According to Foster and Anderson (1978: 42-47), disease theory systems have multiple functions including establishing a rational for treatment through providing an explanation for illness, along with removing the uncertainty that is often related to illness. Another role they play is supporting social and moral cultural norms. In many cultures illness is believed to be a consequence of unacceptable behavior thus, order is maintained in society through fear of acquiring an illness. This fear tactic also serves to quell aggression in members of the society. The last role it serves is to develop nationalistic pride through the promotion of traditional medicine.

The disease system theory most commonly researched in Latin America is the principle of humoral pathology or the hot/cold theory. This theory is closely related to the equilibrium model because one's ability to maintain good health is believed to be achieved through the balancing of 'hot' and 'cold' within the body (Browner 1985a:13; Foster. et. al. 1978: 59-60; Whiteford 1995:220). The only way to maintain the desired 'warmth' within the body is through consuming foods with opposing metaphorical and thermal 'hot' and 'cold' qualities (Whiteford 1995:220). George Foster in his article "How to Stay Well in

Tzintzuntzan" (1984), sees the value of the principle of humoral pathology to be more psychological in nature than physical. The principle of humoral pathology, like all disease systems theories, provides people a sense of control over their health and an understanding of what is going on with their bodies. It also provides an explanation for the causes of illness and a rationale for treatment in order to get the body back into a healthy state. The beauty of humoral pathology is its flexibility, which allows it to be manipulated so that it will always provide the desired result. For instances, if a person becomes ill they can always think back to the previous day's activities and find something they did to violate the rules relating to humoral pathology that could have caused the symptoms they are experiencing.

Browner's (1985a:14) study in Oaxaca, Mexico, on women's decision-making in relationship to their reproductive health, takes the 'hot-cold' theory a step further and argues that it is a part of the much more comprehensive principle of expulsion and retention. She presented a strong case that her informants choose remedies based on their understanding of the physiological processes of expelling and retaining substances. She stated that "the maintenance of hot-cold equilibrium is just one dimension in a set of reproductive therapeutics derived from the principle of expulsion and retention" (Browner 1985a:18). Some of the reproductive therapeutics that were chosen by people interviewed in Browner's study were believed to irritate, burn, or dry out the uterus, remove impurities from the bloodstream or the womb, or heal and/or strengthen the reproductive system as a whole (Browner 1985a:29).

Another principle that coexists with the principle of expulsion and retention is the analogic principle. This principle is based on analogic thinking. Basically the informants chose certain plants as remedies because the physical appearance or growth processes of the

plants were analogous with the therapeutic effects the informants were seeking (Browner 1985a:30). An example of this can be found in Browner's work with the Franciscanos in Oaxaca. The Franciscanos choose to use *Psittacanthus calyculatus* to treat infertility and miscarriage because their understanding of human reproduction is similar to the processes of nutrient extraction exhibited by this parasitic mistletoe. *P. calyculatus* attaches its seed to a host plant and draws out nutrients through embedding its roots into the host plant's tissue. This process is much like the Franciscanos' view of reproduction where the fertilized seed parasitically attaches itself to the woman's spine and extracts the necessary nutrients for growth and survival from the mother's food supply (Browner 1985a:28).

Humoral pathology, the principle of expulsion and retention, and the analogic principle are all disease system theories utilized in Latin America to cultural define health and illness. They are also important because they provide explanations for the causes and effects of health and illness.

Medical Decision-Making

Medical decision-making focuses on what contextual factors are involved in an individual's decision regarding which medical care system he (or she) will seek treatment from and also what type of treatment he (or she) will seek once he (or she) has determined he (or she) is ill. There are several social, cultural, economic, and political factors that play a role in determining which treatments will be chosen within a pluralistic medical system. The decision-making model is an important theoretical framework that will help in understanding why certain treatments are sought for various reproductive concerns.

There are a large number of social and cultural factors involved in the medical decision-making model. The first is based on the disease system theory each society ascribes

to, which shapes people's understanding of health and illness and how to maintain their health. One example of how people understand health and illness is humoral pathology discussed in the previous section. The second factor involved in the decision process is the graveness of the illness (Whiteford 1995:226, Young 1981:142). This boils down to how life-threatening the illness is perceived. The more serious the illness is perceived the more likely the family will be to seek outside help (Young 1981:142). The third social/cultural aspect to medical decision-making is the familiarity of the family with the illness and whether or not they know how to treat it (Young 1981:144). If they are not familiar with the illness they will most likely seek the expertise of someone else. The fourth social/cultural consideration is the amount of faith or effectiveness the individual has in the system for treating certain illnesses (Whiteford 1995:226; Young 1981:145). Some examples of illnesses in Latin America that biomedical treatment has traditionally been ineffective in treating are *mal de ojo* (evil eye), *mollera caída* ('fallen fontanel'), *empacho* (surfeit), and *susto* (fright) (Whiteford:1995; Young:1981). In other words, any illness that does not have a biomedical explanation is likely not to respond to biomedical techniques. The fifth social/cultural consideration is personal preference. Some people prefer certain treatments due to a variety of reasons including, but not excluded to, poor psychological treatment at biomedical facilities, inability of one type of medical practitioner to treat the patient effectively, or misdiagnosis (Whiteford 1995: 226).

There are a few economic factors that play a role in the medical decision-making model. One economic determinant for treatment choice is the accessibility of the treatment site. Both cost of treatment and transportation and the availability of transportation play a major role in the decision-making process (Whiteford 1995:226; Young 1981:149; Barrett

1993:365). This determinant could also be discussed in terms of availability of traditional components for treatment. For instance, a city dweller may have difficulty obtaining some of the materials necessary to make a traditional treatment just as a villager may not have access to a biomedical health care facility. Both economic and social status factors can be important determining factors in medical treatment choice. Pedersen and Baruffati (1989:492) found in their study that people of higher income and status would utilize treatments closer to the biomedical end of the spectrum and people of lower income and status would choose treatments towards the traditional end of the spectrum.

There are also some political considerations when determining which medical treatments to utilize. One political consideration is the stability of the political system of a country and subsequently the stability of the national/biomedical health care system (Barrett 1993:365). In much of Latin America, economies are built on a foundation of mono and dual cash crop systems. This has often resulted in boom-and-bust economies and extreme political instability (Barrett 1993:365). Retaining traditional health care practices may lead to better overall health care especially in an unstable political environment where national health care may not always be available.

Along with the several cultural, social, economic, and political influences on medical decision-making discussed here, social relations and power dynamics between the health care provider, the patient, and the greater social structure play a major role in the process of medical decision-making. Gish (1979:209) wrote that access to "just and efficient health care" is most dependent on the social system within which the medical system operates. In other words, if health care for the poor is not a top priority in the social system, or the social system marginalizes minority ethnic groups, or the elderly are not seen as a group of people

that need to be taken care of, then these social groups will have a difficult time receiving adequate health care.

The social dynamics of health and gender can be seen in the importance of women in household health care. There have been several cross-cultural studies that have shown women play a major role in family health care (Browner 1989; Clark 1993; Finerman 1991; Wayland 2001). Their role includes diagnosis of illnesses, determining the best course of action for treatment of the illness, treatment of the illness or seeking outside treatment (Wayland 2001:174). The role of informal healer gives women a special type of authority within the household (Wayland 2001:174). Social relations become exceedingly important once these women leave the domain of their home and seek treatment from biomedical professionals. The biomedical system does not leave room for inclusion of medical knowledge from the individual or the family members of the individual being treated. Therefore, once women enter into the public health system their knowledge of diagnosis and treatment of illness is ignored by health care professionals (who are often upper class and male) and they are treated as passive recipients of medical care instead of active participants (Wayland 2001:174).

Botanical Remedies and Women's Reproductive Health

"All human societies have a pharmacopoeia consisting of a wide variety of materials including plants, animals (including fish, insects, and reptiles), rocks and minerals, waters (salt and fresh, surface and subterranean), earths and sands, and fossils, as well as manufactured items" (Baer, Singer, and Susser 1997:197). Baer and colleagues are referring to the plants found in the pharmacopoeia of different groups of people. The quantity and variety of plants used in various parts of the world is astounding. The United Nations

Educational, Scientific, and Cultural Organization (UNESCO) published one study on the ethnobotany of the Loita Maasai, who are nomadic pastoralist occupying the southern part of Kenya and the northern districts of Tanzania (Maundu, et al. 2001:5). "The importance of medicinal plants among the Maasai can be seen in the name, *olchani*, which is used both as a general name for all plants as well as for medicine" (Maundu, et al. 2001:22). Throughout their study the researchers found that the Loita Maasai use about 90 species for medicinal purposes in humans. However, the researchers feel that figure is an under-representation and they estimate that the Loita Maasai use at least 180 plants. The plants are used for such things as aches and pains, circulatory system disorders, digestive system disorders, eye diseases, fevers, infectious and respiratory system diseases, urinary tract infections, and wounds, sores and cuts (Maundu, et al 2001:22-24).

Medicinal plant use has also been documented extensively in India and China. James Duke, a well-known ethnobotanist who works for the USDA, wrote: "Like China, India is one of those countries where more citizens rely on traditional medicinal plants than on modern synthetics" (Duke 1996:276). He estimates that there are thousands of medicinal plants used by millions of indigenous people in India (Duke 1996:266).

There have also been documented cases of medicinal plant use in the Pacific region. Paul Cox, then director of the National Tropical Botanical Garden in Hawaii, writes about medicinal plant use by Somoans on the Somoan Islands of the South Pacific. "Nearly all Samoans know of the therapeutic property of a few herbs..... In many respects this general rudimentary knowledge of medicinal plants common to most of the populace would be comparable to the knowledge of over-the-counter remedies by Western consumers" (Cox 1997:212). Along with the general populations basic knowledge of medicinal plants there

are also indigenous healers who a more extensive knowledge of medicinal plants. "Although the number of bonafide *taulasea* [indigenous healers] is few, with perhaps one per several thousand Samoans, the knowledge of a *taulasea* is impressive, with a typical Samoan healer being able to identify between 100 and 200 species of flowering plants by name" (Cox 1997:212).

Medicinal plant use has also been found throughout the Americas. Joseph Bastien, an anthropologist, did research on medicinal plant use and herbal healers in Bolivia. He found that large numbers of Bolivians use medicinal plants. In fact, "Estimates of 60 percent to 70 percent of the Bolivian population rely on natural remedies" (Bastien 1998:310). In Bastien's study he focused on the Kalawaya, an ethnic group in Bolivia who is known for their healing abilities. "The Kalawaya ethnic group has about 128 herbalists who employ more than a thousand medicinal plants….." (Girault 1984:22; 1987 in Bastien 1998:305).

Moving north, there have been quite a few studies done in Mexico regarding the use of medicinal plants. George Foster found in Tzintzuntzan, Mexico, that physicians were preferred for "serious" illnesses however, "herbal teas are widely used as remedies, [and] plasters are stuck to temples for headaches…" (Foster 1984:524). Farther north in the Laguna zone of Northern Mexico Isabel Kelly did a study on folk medicine. She noted that "folk medicine flourishes side by side with modern health services in the small agrarian communities, despite the fact that the government has made modern medicine available for a number of years" (Kelly 1965:21). She also found that people in the Laguna zone used plants in herb baths, decoctions, enemas, poultices, emulsions, and fermented preparations to help cure a range of illnesses (Kelly 1965:24). Even though her research was not specifically on plants used for reproductive health she did find some plants that were used to treat

reproductive problems such as heavy bleeding after a miscarriage, venereal disease and menstrual cramps (Kelly 1965).

In the early 1980s Carole Browner did a study on medicinal plant use for childbirth, fertility regulation, and the treatment of reproductive disorders in Oaxaca, Mexico. She found that "the use of herbal remedies for the treatment of reproductive health problems and the management of reproduction is still nearly universal in San Francisco, despite the fact that the Mexican government operates two health centers in the head town, one of which offers inpatient facilities including prenatal and maternity care" (Browner 1985b:485). She identified 62 different plants that were used for a variety of reproductive maladies including treating menstrual cramps and excessive menstrual bleeding, inducing abortions, treating infertility, speeding up labor, and preventing miscarriages.

Medicinal plant use for women's reproductive health does not just occur in rural areas of Latin America. A group of researchers did a study in New York City on plants prescribed by Latino healers for uterine fibroids, excessive uterine bleeding, endometriosis, and hot flashes. The researchers found that Latino healers prescribed 74 different plants for the treatment of the four reproductive health conditions (Balick, et al. 2000:345).

Culture Change

This last section focuses on cultural change aspects regarding health and illness and medical treatment choices. Cultural change is important in any anthropological study because it can help interpret what aspects of a society are deeply rooted in its belief system. It is also important to determine what health related changes have been effective and which changes have been ineffective and why in order to create a successful health care system tailored to the beliefs, wishes, and the needs of individuals within various societies.

There are many factors that influence individuals' responses to the perceptions and experience of illness. Some of the factors are individual, which were discussed in the section on medical decision-making, while a good number are group related. These include economic and political forces, socially-defined relationships, and cultural meanings (Christakis, et al. 1994:297). In developing countries the distribution of political and economic resources are shaping complex social changes such as commercialization, medicalization, and internationalization. These, in turn, are resulting in changes in illness behavior (Reich 1994:413; Christakis, et al 1994:296). Reich discusses how government intervention, market forces, and non-governmental agencies can result in improving health care in the 'Third World'. He also states that improvements in health care do not always occur because there are lots of factors influencing the success of a health care system that are not taken into account when changes are implemented (Reich 1994:441-442).

An example of socioeconomic change that has resulted in changes in illness behavior is maternal education (Christakis, et al. 1994:283). Even though Christakis, Ware, and Kleinman found that: "Often, the content of education is ineffective in changing beliefs about disease causation and health maintenance" (Christakis, et al. 1994:286), they still found changes in illness behavior in women with increased education. Some researchers determined that the more educated a mother the more likely she will get treatment at a biomedical facility (Caldwell 1979; Cleland and van Ginneken 1988:1361-1363). This could be for several reasons including that the more educated women may be more prepared to negotiate with medical institutions, they may have more access to financial resources, and they may have a better understanding of disease causation and biomedical doctors' recommendations, to name a few (Christakis, et al. 1994:283).

The introduction of new medical systems and treatment options often can be manipulated to fit within existing cultural understanding of health, illness, and disease. An example of this is Bernhard Bierlich's study of health care in Northern Ghana (Bierlich 1999), which looked at the acceptance of biomedical pharmaceuticals by the Dagomba people. Traditionally the Dagomba people did not use money for any type of relationship between people including, healing, help with farm work, or support for political candidates (Bierlich 1999:320). In fact, the Dagomba people believe their medicine is effective because they do not use money to buy it. For the Dagomba the use of money makes social relationships offensive (Bierlich 1999:321). The Dagomba highly value social relationships and the display of respect and solidarity for one another is the extremely critical within their group (Bierlich 1999:322). The introduction of biomedical pharmaceuticals into this system was successfully done by medicine sellers who were willing to sell their product for credit instead of cash (Bierlich 1999:330). The medicine sellers were successful because they respected Dagomba's social relationships (Bierlich 1999:330).

Other groups do not have quite as much initial control over their situation as the Dagomba. In the Madre de Dios region of Amazonian Peru there have been large amounts of culture change due to colonization and development of the region which have negatively affected health care. Over the years the value and status of indigenous knowledge and culture has been discredited by religious and educational institutions. As a result the number of indigenous healers has dwindled significantly even though the indigenous concepts of disease and illness are still widespread (Alexiades and Lacaze 1996:348). Biomedical health care in this same region is also inadequate with few government health centers and limited amounts of medicine (Alexiades, et al 1996:349). FENAMAD (Federación de Comunidades

Nativas del Río Madre de Dios y Afluentes), the regional federation of native communities in Madre de Dios, is working on improve the health situation in Madre de Dios by promoting collaboration between the two health care systems to form a pluralistic system ".....that optimizes the overall medical and cultural efficacy of health care" (Alexiades, et al 1996:356).

Culture change often results in the increasing integration of various medical systems. Pedersen and Baruffati (1989:491) found that individuals who once only utilized the traditional medical system now incorporate aspects from the biomedical system. Interestingly though they have found that medicinal plant use is strongly being retained and is frequently used alone to treat illness, while pharmaceuticals are rarely used without herbs (Pedersen et. al. 1989:491). This means that the biomedical treatments are being incorporated into the rural population's previously established idiosyncratic and explanatory model to form a pluralistic medical system. However, if major changes to the social and economic system or extreme environmental degradation occurs then various areas of traditional medical systems such as the availability and use of medicinal plants, perceptions and etiology of diseases, and traditional value systems could become endangered (Anyinam 1995:321).

Summary

This review examines why a large percentage of the population continues to use their traditional medical system including the use of medicinal plants even when they have access to biomedical health care. The continued utilization of traditional medical systems is not surprising after this discussion of the various medical systems, cultural concepts of health and illness, factors people look at when make medical decisions, and botanical remedies

utilized globally for various health problems including women's reproductive health problems.

Many people continue to use their traditional medical system because it fits well within their culturally defined concept of health and illness. Biomedical systems and the treatment options available within that system may not be good options in some societies depending on their understanding of illness.

Individuals continue to seek treatment within their traditional medical system because it provides people an explanation for illness not available in biomedical systems. Humoral pathology works by providing individuals explanations for the cause of their illness and a rationale for treatment that makes sense to them based on their own cultural context.

Traditional medical systems are often the preferred method of treatment. The traditional medical system fits much better within the individuals' own belief system than the biomedical system. Treatments in traditional medical systems are more attractive because normally they are inexpensive and extremely accessible locally. The political context also plays a role in the continued use of medicinal plants. Many developing countries have a lot of political instability, which affects the reliability of government run health care programs. An example of this is in Barrett's (1993:365) research in Nicaragua. In the 1990s there was a breakdown in the Nicaraguan health care system. Barrett argues that the rural poor prior to the change were better off then the urban poor because they maintained their traditional health care practices and had not become dependent on government run health care.

The use of medicinal plants continues to play an important role in global health care, including the maintenance of women's reproductive health.

CHAPTER 3. METHODOLOGY

Data Collection Procedures

Data were collected during June and July 2002 in Las Minas, Panama. The over-arching research question was focused on whether or not people continue to use medicinal plants regardless of other available health care systems. My research objectives were addressed by using traditional anthropological research methods. More specifically those methods included collecting data through participatory and non-participatory observation, mapping, structured and non-structured interviews, official records regarding the community, and photographing of plant specimens for identification. I formulated several research objectives, which were used in the designing of my research plan, and in the organization and analysis of my data. My research objectives were:

1. Learn about rural Panamanians' concept of health and how to maintain health;
2. Understand the role of various medical systems used in treating rural Panamanian women's reproductive health;
3. Decipher which factors (social, cultural, economic, and political) play a role in the treatments that rural Panamanian women seek for their reproductive health;
4. Determine changes that have occurred regarding treatment preferences of women for their reproductive health, and also determine the causes for these changes.

The first two methods I utilized were non-participatory observation and participatory observation. I began with non-participatory observation by observing community members and their activities and I took notes on those aspects which were relevant to my study. Beginning with this fairly non-intrusive field method was a good way to gain some rapport within the community before beginning more personal methods of gaining information.

Participant observation is a much more interactive field method than non-participatory observation. When using this method, I participated in much more of my study subjects lives while also continuing to observe them (Bernard 1995:138). Participant observation is an extremely important field method not only because it can be used to help validate information obtained from interviews, but it is also a great way to gain more rapport with the residents, thus making interviewing them much easier in the future. One personal experience I had regarding the benefits of participant observation was regarding treatment behaviors related to illness. Throughout my stay in Las Minas I had been questioning the locals regarding their behaviors and treatment choices. It was not until I myself came down with a severe stomachache that I was able to actually witness the process of treatment behavior. This helped me to reinforce what people had been telling me about their medical decision-making behavior and it helped me to gain their trust because I followed their treatment suggestions.

Mapping is another important research method that I used in the early stages of my research. I walked around the community mapping out the various houses, business, churches, recreational areas, and so forth. The mapping process allowed me to meet many members of the community. It also provided me with an excellent opportunity to explain who I was and what I was doing in Las Minas. After I finished my map of the community I used it to take my structured interview sample.

After I mapped out the community and established rapport with many of its members, I began interviewing. I simultaneously utilized various types of interviewing including unstructured, semi-structured, and structured interviews. Unstructured interviews are the most widely used data collection method in cultural anthropology (Bernard 1995:208) and

can be characterized anywhere from informal and unplanned conversations with people, to one-on-one interviews between community members and myself. These interviews were conducted with my research objectives in mind, while still allowing the informant a lot of freedom in her/his response (Bernard 1995:208). I used this method mostly for people I would meet on the street whom I had not intended to formally interview, but they had the potential to provide me with information to supplement my more formal interviews. Some examples are men, children, and women who were not selected for the structured interview sample.

I also used semi-structured interviewing which is similar to unstructured interviewing because it is also a one-on-one format, but it differs in the degree of structure to the interview. I carefully put together a list of open-ended questions and topics that I used as a guide to the conversation, but the informant still has a lot of control over the direction of the conversation within the framework of the questions (Bernard 1995:208). I used this interviewing method for people who were important in my study but with whom I was only able to speak once. The type of people I am referring to are nurses, pharmacists, herbalists, midwives, and post-reproductive age women.

Along with unstructured and semi-structured interviewing, the bulk of my data was collected through fully structured interviews performed at a designated time with an informant under the direction of an interview schedule. An interview schedule is a set of explicit guidelines and questions that help to ensure informants are responding to the same sets of questions. This allows the data to be more easily quantified. I was able to quantify the information by coding the data taken during the interview and then arranging the data

according to those codes. This keeps the data confidential and it also made it easier to retrieve and analyze the material.

The selection of individuals I interviewed using structured interviewing was done in a manner to ensure the sample was random and the information I obtained regarding the sample population could be used to describe the entire study population. The population from which the random sample was selected for structured interviews consisted of women between the ages of 15-45 years old (the ages of reproduction). In order to obtain a random sample I first numbered the 366 occupied houses on the map I made when I first arrived in Las Minas. Then I used a table of random numbers to select the actual houses where I interviewed people. I picked a random point on the table to begin and I recorded the first 40 numbers I came to that were 366 or under (Bernard 1995:144; Martin 1995). Then I went to each house individually and interviewed the women who lived there after they gave me informed consent. If I came to a house that did not have any women between the ages of 15-45, I would move to the house coded by the next random number. If I came to a house with more than one woman between the designated ages, I interviewed all of the women that fit the population criteria. My final sample size was 46 women.

Another important part of my methodology was the photographing of plant samples that community members' used in the herbal remedies. With the assistance of informants, I located and photographed field specimens of the plants used in various herbal remedies. Once the plant samples were photographed and identified with their common names, with help from two Panamanian plant taxonomists, I identified them taxonomically. Identification of these various plants taxonomically is important because it contributes to our understanding of the world around us by providing the framework for understanding the patterns of plant

diversity on earth. Also this information could be used in cross-cultural comparisons of the various economic uses of these particular plants.

Sample Population

Although most of the data in this study came from women of reproductive age, I also interviewed specialists such as midwives, herbalists and older women past childbearing age. I did this because they all have information on traditional health care methods as they relate to women's reproductive health. Another group of specialists I interviewed were nurses and pharmacists since they had information about the biomedical health care system in Panama.

This research focused on women of reproductive age because they have first hand knowledge of reproductive health issues. They have the ability to draw from their personal experiences with their reproductive health, which gave me a unique perspective that I would not have been able to obtain from men or children. I began by gathering general information on their concept of health and how to stay healthy. Then I moved to questions regarding their age, education level, marital status, occupation, socioeconomic status, household distribution of power and number of children because this information is useful in determining if there are any correlations between these factors and the medical treatments women seek.

Once I gathered some general information on these women and their ideas regarding their concept of health, I delved deeper into the treatments they seek for reproductive issues and the reasons behind those decisions. I asked how and from whom they obtained their knowledge of reproduction. I inquired about what factors they take into consideration when choosing treatment for their reproductive health. I also asked them questions related to their

reproductive health history, their fertility desires, and what treatments they seek for any reproductive health problems they have experienced.

The next sub-sample of the population I interviewed were women past their childbearing years. These women were very important to the study because the treatment choices they made and their knowledge of reproduction was used for comparison with the information gathered from interviews with younger women. The differences of decisions made between the two generations were useful in determining patterns of cultural change that influence the younger women's medical decision-making. I asked them questions similar to those asked of the women of reproductive age which made comparisons between the two data sets easier.

Midwives, curers (curanderos), and other traditional health care specialists were interviewed because they were able to provide the traditional health perspective of the medical system spectrum. They also provided specific data regarding cost of treatment, patient time expenditure, expertise of the specialist, effectiveness of treatments, and willingness (or unwillingness) to treat patients. All of these factors play major roles in patient decision-making regarding treatments and medical systems. Depending on how long each specialist had been involved in their trade she or he also had some insights on aspects of culture change that affect medical decision-making.

Nurses, doctors, and pharmacists were interviewed because they provide the biomedical perspective of the medical system spectrum. Many of the same questions used for the traditional medical specialists were also asked of the biomedical specialists making comparative analysis between the two medical systems relatively easy. The comparative

analysis provided some more information regarding the important variables in individuals' decisions regarding which medical system they prefer for various health afflictions.

CHAPTER 4. PRESENTATION OF DATA

Introduction

The presentation of data is divided into seven parts. The first part gives some general demographic information for the 46 women who were formally interviewed and who constitute the basis for much of the discussion. The second part discusses the perceptions of health of the women in Las Minas. The third part focuses on health care options available in Las Minas. Women's reproductive health is the emphasis of the fourth part. The fifth part is dedicated to Las Minas women's treatment decisions in relation to their reproductive health. Women's use of medicinal plants for their reproductive health is the topic of the sixth part. The last part discusses culture change in Las Minas related to women's reproductive health.

General Demographics Regarding the Women

Knowing some thing about the socioeconomic information relating to the women is important in order to give some context to the responses are presented here. The socioeconomic variables highlighted in this study are age, marital status, education, number of people living in one household, occupational status, personal and household income.

The sample represented a large range of ages (see table 1). Twenty-nine years is the mean age of the women. Sixteen of the women I interviewed are single, seventeen are married, and twelve are in free union relationships, which means they are living with someone but they are not officially bound by marriage. One woman is separated from her husband. Almost 45% of the women I interviewed went to school through middle school. The remaining 55% of the women went to high school and a few went to college.

Table 1. Demographics characteristics of women in study group (N=46)

Age of respondent (average)	29
Marital status (percent)	
Single, never married	35
Married	37
Free union	26
Separated/divorced	2
Household size (average)	5
Years of education (average)	11
Total household income per month (average)	320

The average number of household residents is five, ranging from one individuals in a household to eight. Almost three-quarters of the women are not working outside the home. The mean monthly income for those women who are working is $230. The average number of people working in the houses where the women live is one person, although some households have as many as three individuals working and some households have no people working. The average total monthly household income for over half the sample is $200 or less, with twenty percent of the households earning between $200 and $400, and almost a quarter of the households earning $500 or more a month.

Perceptions of Health

In order to understand why various treatment decisions are made by these women, it is important to determine what the women's perceptions of heath and illness are and what state of health they feel they are in (see table 2). When asked what their current state of health is, 20% of the women said their health is excellent to very good, 80% said it is good or regular and none of the women stated that it is not very good. All of the women of reproductive age considered themselves in good health. However, the women past

reproductive age reported their state of health ranged anywhere from poor to good. Interestingly, 50% of the women interviewed felt that their health had improved compared to one year ago. The other half of the women felt their health stayed the same and only one person out of the 46 people interviewed felt that her health had worsened in the same time period.

Table 2. Perception of health (%)

Description of own state of health	
Excellent	4
Very good	15
Good	41
Regular	39
Compare to a year ago, how would you rate your health	
Much better than a year ago	22
Somewhat better now than a year ago	28
About the same as a year ago	50
Somewhat worse now than a year ago	0
Much worse now than a year ago	2

Women of reproductive age were informally questioned about their concepts of health and their maintenance of health. Many believed health as "being in good physical and mental condition". Others described a person with good health as "someone who suffers from nothing, they are perfect". Another woman said that being healthy is to "feel good". Women past their child-bearing years were also interviewed about their concept of health. For several, being healthy meant "not being sick". Some added a spiritual component to health by stating the "mind and soul need to be taken care of in order to be healthy".

In terms of health perceptions (see table 3), one-third of the women interviewed said conservation of health depends, to some extent, on luck. Ninety-five percent of my sample population feels that any person who can learn the basic principles of health can prevent sickness. Again, almost everyone (96%) feels that doctors can cure only some of the medical problems of their patients. Two-thirds of the women feel that there are lots of sicknesses today that are severe in nature and almost everyone (91%) feels there are some types of sicknesses that are so serious that nothing can be done to cure them.

Table 3. Perceptions regarding staying healthy/health maintenance (%)	*No*	*Yes*
The conservation of health depends on luck	65	35
Any person that can learn the basic principals of health can prevent sickness	4	96
Doctors can cure only some of the medical problems of their patients	4	96
Today there are few sicknesses that are severe in nature	65	35
There are some types of sicknesses that are so serious and nothing can be done to cure them	9	91

All of the women (reproductive age and beyond) have various methods for maintaining their health. Several of them said eating healthful foods, such as fish, chicken, eggs, and beans, is one way to maintain their health. Exercise is another way to stay healthy; some women do housework and others walk around the community for exercise. A few women think living in a clean environment is also important for the maintenance of health. Potable water, hygienic food markets, and a clean house are some of the variables they cited for maintaining a healthy environment.

Health Care Options

Residents of Las Minas have a variety of biomedical and traditional health care options available to them. One of these is the government-run health center (Centro de Salud) in Las Minas that operates from 8am-3pm Monday through Friday. There are two doctors, one dentist, and five nurses who work in the health center. The consultation at the clinic is free for those with social security, and it costs one dollar for people without this coverage. The medication is also free for those with social security, but for those without they are required to pay the full cost. Many people in Las Minas also utilize the two closest biomedical hospitals in the province. One is in Ocú, which is approximately a thirty-five minute drive, and the second one is in Chitré, which is an hour drive from the community. Both of these facilities are open 24 hours a day and are accessible by bus during the daytime.

There are two pharmacies in Las Minas. One is located inside the health center and the other is privately owned. Prescription drugs can be purchased at either pharmacy. The woman who dispenses medication at the health center notes the doctors discourage the use of other treatments besides allopathic medicine. The privately-run pharmacy is open Monday through Saturday from about 7am to 8pm and is run by an individual who learned his job by apprenticing under another pharmacist for seven years in Chitré. Less than a year ago he opened the pharmacy in Las Minas. Not only does he fill prescriptions, but he also gives his clients advice regarding which medications they should use for the symptoms they are experiencing. He believes that it is fine for people to use a combination of medicinal plants and allopathic medicine, but with precaution. In fact, his pharmacy, unlike the one in the health center, sells a limited supply of herbs. He also sells over-the counter medications for those who wish to self-medicate using allopathic medicine.

Along with biomedical health care options, there are also several traditional health care options available to residents. There are a few traditional healers or curers (curanderos/as) who live in the region. Each of the curers learned his or her trade in different ways. One healer believes his ability to heal was a gift that was bestowed on him and his twin brother at the time of birth. Another curer taught herself her trade by reading books on herbal treatments. The last healer taught himself through books and he experimented with herbal treatments on himself.

All of the healers explained the consultation and treatment process similarly. The patient comes to the curer and explains his or her health problem. The curer then prescribes some sort of intervention. All utilize herbs in their treatments, but the first two also use prayer or some sort of spiritual intervention in their treatments as well. All of the curers ask their patients to come back within a month to see if the treatment was effective. If the treatment does not produce the desired results, they prescribe something else or they tell the patient to go see a physician. One of the curers also encourages patients to see a biomedical doctor if they need or want fast results. She notes that herbs work well, but it takes time to see results.

The healers charge anywhere from $10 to nothing for their services. One even includes the medicinal plants for free. Two of the healers live relatively far from Las Minas. One lives in Leone which is a small village about an hour's drive away on poor roads with no public transportation. Another healer lives near Chitré which is over an hour's drive however his home is accessible via public transportation. The third healer lives much closer, only a twenty minute drive, and is accessible through public transportation.

Several midwives, who live in the area, assist in at home births. Las Minas only has one midwife, but more rural regions in the district have many more. I interviewed four midwives, one in Las Minas and the other three in nearby villages. All learned birthing techniques from their mothers or grandmothers. Some had mothers and grandmothers who were midwives themselves, and some of them birthed their own children.

All describe their job as an "assistant to the mother" as she gives birth. The process the midwives go through when they assist in childbirth is very similar. The position the woman is in during birth varies. Sometimes the mother kneels, sometimes she lies on her back, or sometimes she squats. This depends on both the mother's preference and also the midwives' preference. One of the midwives knows when a woman is going to give birth based on the position of her pulse on her arm. She said the woman's pulse will start at her wrist and when she gets closer to being ready to birth it moves to the pit of her elbow. When she is ready to give birth, her pulse will be on her arm near her arm pit. She notes that she can tell when a woman will have a difficult birth. When a woman is in pain, her pulse does not move; it stays at her wrist. After the birth the midwives cut the umbilical cord with a razor blade and tie it with a rag or piece of string that had been disinfected with alcohol. One midwife puts goat fat around the cut to keep the cold air from entering the baby's body. Then they clean the baby and the mother and give the baby back to the mother.

Midwives charge anywhere from $10 to offering their services for free. All of the midwives for a variety of reasons administered some herbal teas or mixtures during or after the birth. The midwives told me about a few drinks they administer to the women during birth. Some of the midwives give black coffee to the women in labor because they believe it stimulates the birth. One midwife asks expectant women to drink alcohol made out of leaves

of col de castigo to help stimulate the birth. The midwives also have several herbal teas they believe should be drunk after the woman gives birth. One midwife told her attendees to drink a tea mixed with several herbs for 40 days to prevent disease. She also suggests drinking another herbal mixture for eight days after the labor to reduce inflammation. All prescribe a drink made with the juice of the calabaso fruit because it helps expel the afterbirth and clean the women's reproductive organs. Some midwives tell the women to drink it for 40 days after the birth while others think three days is sufficient. One prescribes a tea of hierba de pasmo to help with lower back pain after the birth. Another midwife gives her attendees a shot of Seco, a local liquor, to help calm the mother after the birth. Some even have rules about what not to do after giving birth. The new mothers are not suppose to drink cold water or get their heads wet for 40 days and they are also supposed to cover their heads and ears for the same time period or they will get sick with migraines and arthritis[3].

Most will help any woman who is pregnant through her labor, although one midwife told me she will not assist women who are going through their first birth because those are the most dangerous. Instead she tells them to go to the hospital to have their baby. Another midwife will not attend women who are having abnormal pain or whose pulse is not moving properly; she also sends them to the hospital. Some took a course on midwifery offered by the Ministry of Health and became certified midwives.

Self-treatment with medicinal plants is another traditional health care option available for the residents of Las Minas. Three-quarters of the women interviewed use medicinal plants. When asked to name illnesses they use medicinal plants to treat, all were able to

[3] "La cuarentena" stems from an old circum-Mediterranean belief whereby a child and mother are felt to be particularly vulnerable to natural- and spiritually-derived illnesses during the first 40 days following birth.

name at least one illness. Almost half could name two illnesses they treat with medicinal plants. A quarter of the women reported using medicinal plants to treat three different illnesses and 15% of the women treat four different disorders with medicinal plants. Only three of the women interviewed stated five different maladies they treated with medicinal plants. One woman was able to name nine different illnesses she treats with medicinal plants.

The most common type of illnesses treated with plants is digestive system disorders, such as stomachaches, diarrhea, vomiting, and parasites; over 40% of the illnesses reported were in this category (see table 4). The second most common illnesses treated, with over 20% of the responses, are aches and pains which include headaches, toothaches, leg pains, and rheumatism. The third most common category is infectious and respiratory system sicknesses including colds, coughs, blood cleansing, infections, and asthma with a little over 16% of the total number of responses in this category. Skin disorders, including skin lesions and external body cleansing, is the fourth most common category with almost 10% of the illnesses treated by herbal remedies. Only 6% of the illnesses treated with medicinal plants by the women interviewed were for reproductive system disorders such as menstrual cramps and ovary cleaning. The least common category, with only 4%, is treatment of nervous system disorders such as insomnia and nerves.

The plants used to treat the variety of maladies stated previously are acquired by the women in several different ways. More than three-quarters of the women who use medicinal plants grow their own plants. One in ten collect plants they need in the forest. A little over 5% of them buy the plants from plant vendors. Several of the small grocery stores in Las Minas carry a small assortment of herbs including sen, canela, calvito, cebada, boldo, linaza,

valariana, and anise. The herbs are sold in small packets for $.10 a piece. The least frequent method of obtaining medicinal plants is as gifts coming from relatives, friends and acquaintances. Only 3% of the women acquiring plants using that method.

Table 4. Inventory of Illnesses Treated by Medicinal Plants (%)

Digestive Disorders	43
General "aches and pains"	22
Respiratory Infections	16
Skin Ailments	09
Reproductive system disorders	06
Disorders of the nervous system	04

Women's Reproductive Health

Reproductive health issues affect every woman that lives in Las Minas. Those reproductive health issues include issues related to fertility and childbirth, such as infertility, birth control, miscarriages, abortions, and labor. They also include issues related to menstruation including amenorrhea (lack of menstrual period), menorrhagia (heavy prolonged menstrual bleeding), and dysmenorrhea (menstrual cramps).

Childbirth is one important reproductive health issue in Las Minas (see table 5). Two-thirds of the women interviewed have been pregnant. The average number of children born to the women who have conceived is approximately 2.5. The most common number of children per women is two children, with the range going from one to ten. Of the 33 women who were pregnant, eight women had at least one miscarriage and two women had children that died after birth.

I learned that the number of children people want to have is often different from the number of children they have in reality (see table 6). When I asked women what their "ideal" number of children was for them, almost half (45%) of them told me the ideal number was two children. A third said three children was the ideal number for them. A little over 10% thought one child was the ideal number for them. Almost 9% said they thought the ideal number of children was whatever God thought was appropriate. Six percent of the women said four children was the ideal number for them and one woman said she thought five was the ideal number for her.

Table 5. Childbirth in Las Minas (N=46)

Women who have been pregnant (percent)	65
Children per woman (percent)	
One	23
Two	27
Three	23
Four	17
Five	03
Six	03
Ten	03
Women who had miscarriages (percent)	24
Women who had a child die after birth (percent)	06

When the women were asked what the ideal number of children to have in general, their answers were slightly higher than the ideal number of children they wanted for themselves. The answers "two" and "three" children as the ideal had an equal number of responses with 40% each. Over 10% felt four children was the ideal number and 5% thought five was the ideal number of children. Only 2% of the women thought that one was the ideal number of children.

I also inquired about the ideal number of children the women's spouses wanted. The women were much more uniform in their responses to this answer than they were in response to the ideal number for themselves. An overwhelming 60% think their spouse wants two children. Twenty percent believe their husbands want three children. One woman thinks her husband wants however many children God gives them. The remaining 10% of the women are unsure about how many children their husband wants.

Table 6. Ideal number children (N=46)

Ideal number of children personally (percent)	
One children	11
Two children	44
Three children	28
Four children	07
Five children	02
Whatever God sends her, etc.	09
Ideal number of children generally (percent)	
One children	02
Two children	41
Three children	41
Four children	11
Five children	05
Ideal number of children for their spouses (percent)	
Two children	60
Three children	23
Six children	03
Whatever God sends him	03
Wife is unsure of her husbands wishes	10

Where the mothers give birth to their children, and who they chose to assist them brings in another set of issues that are important to discuss. Only 8% of the children were born at home compared to 92% of the children were born in hospitals or clinics. In contrast, 40% of the women interviewed were born at home and only 60% of them were born in

hospitals or clinics. All of the women I interviewed informally past-reproductive age were born at home. Thus, one can see a rather significant change in one aspect of the birthing methods.

The cost of giving birth varies depending on where the mother decides to give birth and whether or not she has social security[4]. For women with social security who gave birth in government run hospitals the birth did not cost anything. For the 80% of hospital births, where the mothers did not have social security, the average cost was $26. Very few women choose to give birth in a private clinic; for those who did, the average cost was over $1100. Some of these women had social security, but the government only pays for the cost of the birth at public hospitals. None of the women who gave birth at home with the assistance of a midwife were charged anything.

Not only is birth an important variable related to reproductive health, so is death. Abortion is an issue that was difficult to get information on because it is illegal in Panama. I spoke with one of the investigators who had worked at the Office of the City Attorney for 30 years and he told me that during that time period there has only been one reported case of a woman aborting her baby, and she was sentenced to five years in prison. Not surprisingly, I was not able to get any additional information from the women I interviewed regarding abortions and the frequency of abortions in Las Minas.

The other major category related to women's reproductive health is menstruation and problems relating to menstruation. The average age the women in my study went through menarche was at age 13 years. The age range for women to reach menarche was from 10 to 19 years of age. More information on this topic will be discussed in the next few sections.

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[4] Social security in Panama is equivalent to government sponsored health insurance.

Women's Treatment Choices for Their Reproductive Health

Almost half (40%) of the women of reproductive age in Las Minas have had reproductive health problems. There are several treatment options for these women. Almost two-thirds of them said they treated their reproductive health problems by seeing an allopathic doctor. Over a fifth of the women said they self-medicated with herbal remedies. Ten percent said they went to their pharmacist for treatment. Only a small number (5%) self-medicated with over-the-counter biomedical treatments. The remaining (5%) chose not to treat the problem at all. A few women told me they would use a combination of treatments, first they would self-treat the problem with herbal remedies and if the situation did not improve then they would see a physician or a pharmacist.

The women who preferred to see a doctor were asked "why". Two-thirds said they thought the medical doctor would be more effective for their particular problem. The remaining simply trusted the doctor more than self-treatment with herbal remedies.

Many of the women past-reproductive age also utilize both the biomedical health care system and the traditional health care system (i.e. medicinal plants). Several went to allopathic physicians when they had illnesses that were associated with strong pain. Others used medicinal plants to treat minor illnesses.

The three biomedical treatment choices utilized by women for their reproductive health concerns are the hospital, the biomedical health center, and the pharmacist. The nurse at the health center sees approximately ten women a day for reproductive health issues. This includes family planning, birth control, and prenatal care. The cost for birth control pills is two dollars a month for everyone, even those with social security. Prenatal care costs vary, depending on the specific needs of the woman. The health center in Las Minas does not

participate in the actual labor of women because their hours are regular and births often do not fit within that schedule.

The owner of the private pharmacy has some clients that come to him with reproductive health issues. He sells contraceptives such as pills which cost $2.75 for one month's supply. He also offers injectables, which are between five dollars and seven dollars for one month's supply. For clients with amenorrea, he sells a pill which costs $0.32 a pill and he prescribes two pills a day for five days. He also has clients come in that are experiencing menorragia. In these instances he recommends treatment costs $1.50 each.

There are also traditional health care treatment options available to women for their reproductive health issues; those options include midwives, curers and self-treatment with herbal remedies. Only one of the curers treats women for reproductive health problems. He has treated women for irregular periods and cramps with a tea made from the leaves of contragavilana (*Neurolaena lobata,* golden bitters). He also suggested women use the juice from the calabaso (*Crescentia cujete,* calabash) fruit to clean the body after birth. He knows of several plants that could be used to induce abortions but he said he would never assist a woman who wanted an abortion.

Medicinal Plant Use for Women's Reproductive Health

Women were asked to name any plants they knew to treat reproductive health related issues including infertility, birth control, miscarriages, induce abortions, induce period, treat excessive menstruation, treat menstrual cramps, accelerate labor, stop labor pains, and clean the body after labor (see table 7). Almost all (90%) of the women knew of at least one herbal remedy used for treatment of women's reproductive health problems.

Women cited two plants, frailecillo and contragavilana, to treat infertility. Three plants, palma de vino, salvia, and canela, are used as birth control. Jujuca, palma de vino, cilantro, achiote, calabaso, and jengibre are known to induce abortions. Some of the women know of treatments for missing periods; they use eight different plants to induce their period, those plants are canela, oregano, limon, jujuca, sen, cilantro, contragavilana, and cebolla.

Table 7. Inventory of Plants Used to Treat Reproductive Health Problems

Ailment	Spanish name	Scientific name	English name
Infertility	Achiote	Bixa orellana L.	Annatto
	Calabaso	Crescentia cujete L.	Calabash
	Canela	Cinnamomum zeylanicum Blume	Cinnamon
	Cilantro	Eryngium foetidum L.	False Coriander
	Jengibre	Zingiber officinale Roscoe	Ginger
	Jujuca		
	Palma de vino	Acrocomia aculeate (Jacq.) Lodd. ex. Mart.	Macaw Palm
	Salvia	Buddleia americana L.?	Butterfly Bush?
Amenorrhea	Canela	Cinnamomum zeylanicum Blume	Cinnamon
	Cebolla	Allium cepa L.	Onion
	Cilantro	Eryngium foetidum L.	False Coriander
	Contragavilana	Neurolaena lobata (L.) Cass.	Golden Bitters
	Jujuca		
	Limon	Citrus aurantifolia (Christm.) Swingle	Lime
	Oregano	Coleus amboinicus Lour.	Indian Borage
	Sen	Cassia senna L.	Senna
Menorrhagia	Achiote	Bixa orellana L.	Annatto
	Calaguala	Polypodium aureum L.	Rabbit's Foot Fern
	Flor de Mar		
	Limon	Citrus aurantifolia (Christm.) Swingle	Lime
	Mollejita		
	Salvia	Buddleia americana L.?	Butterfly Bush?
	Sanguinaria	Alternanthera brasiliana (L.) Kuntze	Brazilian Joyweed
Dysmenorrhea	Almendro	Terminalia catappa L.	Tropical Almond
	Apio	Apium graveolens L.	Celery
	Anis	Illicium anisatum L.	Anise Tree
	Arrayan		
	Calaguala	Polypodium aureum L.	Rabbit's Foot Fern
	Canela	Cinnamomum zeylanicum Blume	Cinnamon
	Cebolla	Allium cepa L.	Onion
	Cedron	Simaba cedron Planch.	Cedron

Table 7. (continued)

Ailment	Spanish name	Scientific name	English name
Dysmenorrhea	Cilantro	Eryngium foetidum L.	False Coriander
	Col de Castilla	*Brassica spp. L.*	Cabbage Family
	Col de Yuca	*Cnidoscolus aconitifolius (Mill.) I.M. Johnst.*	Chaya
	Coral de Quebrada	*Lippia dulcis Trevir.?*	Aztec Sweet Herb?
	Jengibre	*Zingiber officinale Roscoe*	Ginger
	Laurel	*Cordia alliodora (Ruiz & Pav.) Oken*	Spanish Elm
	Laurena	*Cassia reticulata Willd.*	Golden Lantern
	Llanten	*Plantago major L.*	Plantain
	Mastranto	*Lippia alba (Mill.) N.E. Br.*	White Lippia
	Oregano	*Coleus amboinicus Lour.*	Indian Borage
	Oregano Chino		
	Paja de Limon	*Cymbopogon citratus (DC.) Stapf*	Lemongrass
	Papayo	*Carica papaya L.*	Papaya
	Pasorin Morado		
	Sabila	*Aloe vera (L.)Burm. f.*	True Aloe
	Tilo		
	Toronja	*Citrus paradisi Macfad.*	Grapefruit
	Toronjl	*Verbena litoralis Kunth?*	Seashore Vervain?
Prevent Miscarriages	Achiote	*Bixa orellana L.*	Annatto
	Canela	*Cinnamomum zeylanicum Blume*	Cinnamon
	Col de Yuca	*Cnidoscolus aconitifolius (Mill.) I.M. Johnst*	Chaya
	Coral de Quebrada	*Lippia dulcis Trevir.?*	Aztec Sweet Herb?
	Pasorin Morado		
Accelerate Labor	Café	*Coffea arabica L.*	Coffee
	Canela	*Cinnamomum zeylanicum Blume*	Cinnamon
	Oregano	*Coleus amboinicus Lour.*	Indian Borage
	Palma de Corosito	*Elaeis guineensis Jacq.*	African Oil Palm
Ease Labor Pain	Café	*Coffea arabica L.*	Coffee
	Canela	*Cinnamomum zeylanicum Blume*	Cinnamon
	Col de Yuca	*Cnidoscolus aconitifolius (Mill.) I.M. Johnst*	Chaya
	Coral de Quebrada	*Lippia dulcis Trevir.?*	Aztec Sweet Herb?
	Oregano	*Coleus amboinicus Lour.*	Indian Borage
	Pasorin Morado		
Expel Afterbirth	Arroz	*Oryza sativa L.*	Rice
	Calabaso	*Crescentia cujete L.*	Calabash

Several of the women know of treatments for excessive menstruation. These treatments include plants such as salvia, achiote, sanguinaria, flor de mar, limon, mollejita,

and calaguala. Menstrual cramps affect a large majority of the women and they know of a wide array of botanical treatments for cramps. They named 25 different plants that are useful in treating menstrual cramps including almendro, col de castilla, oregano chino, canela, mastranto, oregano, arrayan, anis, cedron, paja de limon, calaguala, papayo, col de yuca, cilantro, llanten, apio, toronja, tilo, toronjl, jengibre, coral de quebrada, cilantro, laurel, pasorin morado, cebolla, sabila, and laurena.

A few plants are known for use in preventing a miscarriage; those plants are achiote, col de yuca, canela, coral de quebrada, and pasorin morado. Several women know of herbal remedies that are effective in accelerating labor. Those remedies included café, oregano, canela, and palma de corosito. A number of women also know of plants that are used to ease labor pains including col de yuca, oregano, canela, coral de quebrada, café, and pasorin morado. Many talk about plants to help expel the afterbirth from the mother. Twenty-six women told me juice made from the calabaso fruit is used for that and a few women told me arroz water, which is water that rice has been soaking in, can also be used.

Many of the women felt that medicinal plants work to treat the various aliments because they are effective at alleviating the pain or the problem. Several of the women did not know why the plants are effective. One woman utilized the properties of humoral pathology to explain why the plant is able to treat the problem. She feels that canela is effective at treating menstrual cramps because they have a cold quality and canela is hot.

People tend to know about medicinal plants for problems they had experienced or someone they knew had experienced. Three-quarters of the herbal remedies women told me about were one they had used themselves. Also, the women felt that almost all (90%) of they treatments they cited were effective in treating the problem. When asked who taught them

about these different botanical treatments, over two-thirds learned about the treatments from their mothers or grandmothers, 20% of the treatments came from other family members, a little more than 15% were from friends and acquaintances, and less than 5% learned botanical treatments from doctors or herbalists.

Cultural Change

Several different groups of people told me about cultural change that has occurred in Las Minas as it relates to reproductive health options and choices. Women past-reproductive age have noticed a change in the preferences of women for different health practitioners during their lifetime. Women believe that many females today prefer biomedical options over traditional options compared to the past. One woman believes this change is because there are not good curers anymore; she states that all the curers that exist today are liars. Another 74 year old woman discusses several reasons for the change from women using medicinal plants for their reproductive health to women going to see doctors. She claims the change began with lots of health programs being broadcasted on the radio that promoted biomedical doctors. The second thing was the arrival of more and more doctors who came to rural areas to treat people. The schools began teaching the children to go to the doctor. She also thought good roads and faster means of communication which allowed people to travel more and learn about new ways to treat sickness played a role in the change in treatment practices. The number of doctors has grown in the region and the number of curers and midwives has decreased over the years. She believes that there are not many herbalists left because the children are no longer interested in learning about herbal medicine and many of the old herbalists and midwives have died. She said that this process of change has occurred over a long period of time.

One nurse at the health center who has worked in Las Minas for 23 years was able to provide another perspective on change in the community. When she began working at the health center it was really small with only one nurse working there. Over time she noticed a definite increase in the number of people who utilize the facility. She believes the increase is because they have more resources now and better coverage of services and attention.

The curers were asked if they had seen an increase or decrease in their clientele. One curer who has been treating patients for 12 years stated that she has seen a great decrease in clientele during that time. She thinks that the poor economic situation is what caused the decrease. Another curer who has been practicing for 13 years thought that the number of clients he sees has remained the same over the years. I also had the opportunity to speak with a former curer from Las Minas about the changes that have been occurring there. He said there use to be a lot more curers before the main road between Chitré and Las Minas was built in 1977. Now he said people can move around a lot more freely and they have access to biomedical forms of healthcare so they are less interested in curers.

Midwives were asked the same question. All four of the midwives learned their trade several decades ago. All of them have seen a large decrease in the number of women giving birth at home. The majority of women now go to hospitals. One midwife learned midwifery 40 years ago but just began practicing around 10 years ago. She said she used to attend approximately three to four women a month, or approximately 36 to 48 a year. Now she only attends ten a year. The midwives cited a variety of reasons why fewer people are seeking the help of midwives for their births. One believes this trend is due to an increased accessibility of the hospitals because of better roads and an increased number of hospitals in the area. Another thinks it is because doctors are more specialized than midwives and people

no longer trust midwives. A third midwife thinks the changes are the result of a law the government put in place saying midwives need a license to practice. She thinks this law has scared many midwives away from their occupation. She said that many midwives do not have formal training or licensing so if something happened during the birth that the mother did not like the midwife could potentially go to jail.

Summary

There are several traditional and biomedical health care options available to the residents of Las Minas including a health care center, two hospitals, two pharmacies, a few curers, some midwives, and an abundance of medicinal plants. Women in Las Minas employ different methods of treatment for all types of health problems even those related to reproductive health. Some of the factors that influence their treatment choices are their concept of health, cost, degree of pain, trust of the health practitioner, and accessibility. Health care treatment options and choices have been changing over a long period of time for a variety of reasons.

CHAPTER 5. DISCUSSION AND CONCLUSIONS

Introduction

This chapter summarizes some of the important points that emerge from this study and then draws some conclusions about what this means and where to go from here. The chapter is divided into four sections that are based on my research objectives. My research objectives are:

1. Learn about rural Panamanians' concepts of health and how to maintain health;
2. Understand the role of the various medical systems used in treating rural Panamanian women's reproductive health;
3. Decipher which factors (social, cultural, economic, and political) play a role in the treatments that rural Panamanian women seek for their reproductive health;
4. Determine changes that have occurred regarding treatment preferences of women for their reproductive health, and also determine the causes for these changes.

The first section in this chapter reviews the roles of various medical systems in Las Minas. The second looks at the concept of health and the maintenance of health. The third part examines some of the medical decision-making factors important to Las Minans. The last segment analyzes some of the changes that have occurred in Las Minas and how these have influenced health care in the area. Finally, some conclusions are made along with some discussion of the importance of this research.

The Role of Various Medical Systems

There are a number medical system treatment options in Las Minas that are utilized for various health problems. Biomedical health care facilities are available, including the medical center, hospitals, and pharmacies. Traditional health care options are also available. These include midwives, curers, and self-treatment with herbal remedies. Three-quarters of

the women interviewed use medicinal plants for digestive disorders, general "aches and pains", respiratory infections, skin ailments, reproductive system disorders, and disorders of the nervous system, which shows medicinal plants are still a common treatment method. The hospital and the health center tend to be utilized for more painful and persistent health problems.

The treatment options for women's reproductive health issues, such as childbirth, fertility, and menstruation, are the same as other health concerns. Currently the majority of women of reproductive age prefer to give birth to their children in biomedical hospitals, although a few gave birth at home with the assistance of a midwife. This has changed from the previous generation where almost half of the women were born at home with the assistance of a midwife and the generation before that when almost all of the women were born at home. In terms of childbirth there is a definite trend towards the acceptance and use of biomedical treatment options.

The role of the various medical systems for treating issues relating to fertility and menstruation are different from their role for childbirth. Most of the women (two-thirds) utilize biomedical health care facilities for issues related to their fertility and menstruation. The second most common treatment (one-fifth of the women) involves self treatment with medicinal plant remedies. A smaller number of women utilize over-the-counter biomedical treatments obtained in pharmacies and none of the women go to curers for their reproductive health concerns. More women are utilizing biomedical health care facilities then in the past to treat issues related to fertility and menstruation, however medicinal plant use continues to be a common method for treatment of less severe problems.

The residents of Las Minas operate within a framework of medical pluralism. They select various aspects of the biomedical system and their traditional medical system to treat their illnesses and also maintain their health.

Concepts of Health and Maintenance

Conceptions of health vary among the women of Las Minas. The women in their childbearing years focus on mental and physical wellbeing when talking about their health. The women past their childbearing years are more inclined to include aspects of spirituality along with their physical and mental wellbeing into their understanding of health and illness. This suggests that conceptions of health change over time from more holistic in nature to more specific. This trend shows a change from a traditional disease system to a more biomedical disease system.

Reproductive age women's beliefs regarding the maintenance of health also vary. One-third of the women believe that luck plays a role in health. Biomedical perceptions of health do not incorporate luck into their disease etiology. However, many traditional etiologies incorporate luck into their belief system. Almost all of the women believe that they have some control over their own health destiny. This belief is characteristic of both biomedical and traditional disease systems. Some of the data indicated that there was a gentle concern within the women interviewed regarding the total effectiveness of allopathic medicine. This suggested that the women are continuing to use traditional medicine as a supplement for the insufficiencies of allopathic medicine. Based on these data, many women are using a combination of biomedical and traditional disease system theories in regards to the maintenance of health.

Pearson correlations were performed to assess the strength between demographic variables and variables related to Las Minan's concept of health. A few statistically significant relationships were found. There is a positive correlation ($r=.295$, $\rho<.05$) between a persons state of health and the belief that doctors can cure only some of the medical problems of their patients. Individuals who felt that any person can learn the basic principals of health can prevent sickness also tended to believe that there are some types of sicknesses that are grave and nothing can be done to remedy them ($r=.313$, $\rho<.05$). Another positive correlation ($r=.320$, $\rho<.05$) was found between individuals who use medicinal plants and believe there are some types of sicknesses that are grave and nothing can be done to remedy them. The longer Las Minans went to school, the less likely they were to believe that the conservation of health depends on luck ($r=-.306$, $\rho<.05$). This suggests formal schooling is involved in shaping a person's disease system theory. Also, there is a strong positive relationship between the number of years the women studied in school and their approximate total household income per month ($r=.563$, $\rho<.05$).

Although the disease system theory most commonly related to Latin America is the principle of humoral pathology, I found relatively little evidence of it in Las Minas. When asked why they chose to use certain plants to treat various reproductive health issues, their responses were most often related to the effectiveness of the plant and not the humoral quality of the plant. However, on a few occasions women brought up information that fit within the principals of humoral pathology. On one occasion a woman in her early 40's told me that canela (cinnamon) is effective at treating cramps because cramps are a cold illness and canela has a hot quality. Her description of why canela is effective at treating cramps fits well within the principles of humoral pathology. Also, the principles of humoral pathology

were discussed by a few people in relationship to birth. Some of the old midwives told me that mothers were not suppose to drink cold water or get their head wet and keep their head and ears covered for 40 days after birth or they will get sick with migraines and arthritis. However, several women mentioned that that type of behavior was practiced in the past and that women no longer believe it.

It would appear that the principles of humoral pathology were practiced in the past in Las Minas, but are no longer followed by the majority of the residents. Over the last three or four decades the majority of Las Minans have moved from a humoral pathology based disease system theory to a natural science based disease system theory.

Medical Decision-Making Factors

There are several medical decision-making factors that women in Las Minas take into consideration when deciding what type of treatment they will pursue to treat their reproductive health issues. Several of these decision-making factors are similar to those found by other researchers in their studies outlined in the literature review chapter.

Perceptions of the "seriousness" of an illness were one factor that went into decision-making. Many women would utilize medicinal plants to treat minor pain, but if the pain was severe or the illness persisted then they would go see a medical doctor.

Tradition and familiarity with the illness also plays a part in the treatment choices of the women. The women tend to know medicinal plant treatments for problems they, or someone close to them, have experienced. Also, a large majority of the plant remedies (80%) the women were knowledgeable about were taught to them by family members. This suggests that these plant remedies are being passed down from generation to generation.

Another consideration is the "faith" or "effectiveness" the individual has in the system for treating a certain illness. Two-thirds of the women who went to see the allopathic doctor stated that they felt that was the most effective treatment option for their particular problem. There are a few possible reasons for their response. The first is they have utilized herbal treatments before for their particular problem and they were ineffective at reducing or eliminating it. Another reason is they do not believe herbal treatments are effective to treat the problem so they sought another form of treatment. I also spoke with a few women in Las Minas who sought the help of a traditional healer to treat their illnesses after they had been ineffectively treated by medical doctors.

"Trust" is also an issue the women take into consideration. One-third of the women who utilized biomedical facilities stated they choose the allopathic doctor over self-treatment with herbs because they trust the doctor more.

The cost and accessibility of the treatments are two other considerations. All of the methods of obtaining plants are inexpensive and accessible. Many of the pharmaceuticals prescribed for fertility and menstruation issues are not particularly expensive, however the pharmacies often did not have the medicines the allopathic doctor prescribed in stock making them inaccessible to the women. Many women would begin their treatment with remedies that were the most accessible and inexpensive and if those proved to be ineffective then they would seek out other forms of health care.

Medical Care and Cultural Change

Over the last few generations there has been a large amount of cultural change relating to medical care in Las Minas. The increase in number and accessibility of biomedical facilities and improved roads and public transportation have caused the number

of biomedical health care users to increase dramatically from previous generations. In the past women relied entirely on traditional health care methods, but now they are able to choose between biomedical and traditional health care. Government supported radio broadcasts promoting the use of biomedical health care facilities also contributed to the shift from sole reliance on traditional health care to a pluralistic health care system. The number of traditional medical practitioners began decreasing with the increase in biomedical practitioners in the region. The youth began to lose interest in curers and midwives when the schools began teaching them that they needed to visit the biomedical doctor in order to maintain their health.

All of the changes that have occurred in Las Minas have resulted in a shift for many from a disease system theory centered on traditional medical systems to a system more biomedical in nature. Aspects of the traditional medical system continue to be utilized widely in Las Minas, such as the use of medicinal plants. Some have maintained their traditional explanations of why medicinal plants are effective while the vast majority modified their view of medicinal plants to fit within a biomedical disease system theory. The efficacy of medicinal plants is no longer described by the majority of Las Minans in terms of their humoral qualities; instead they are understood by the principles of the natural sciences. They view their illness as an isolated problem separate from all other functions of the body, environmental influences, and spiritual beliefs. The treatment is focused entirely on the illness and curative measures are normally taken instead of preventative measures. Some people retain the traditional disease system theory to explain their use of certain medicinal plants for treatment.

A good example of the range within traditional and biomedical disease system theory in Las Minas is the use of calabaso to "cleanse the body" of the afterbirth. Half of the women I sampled cited calabaso as being effective for expelling afterbirth. Many women (40%) cited that juice from the calabaso fruit should be drunk anywhere from 15 days to one month after giving birth. Almost an equivalent number of women (35%) felt that the juice should be drunk anywhere from one time to five days. One woman felt that the juice should be drunk until the woman tires of it. The rest of the women (20%) did not specify a length of time the remedy should be taken. A number of the women did not use any type of herbal remedy to expel the afterbirth. This would suggest that those who do not rely on any herbal treatments to expel the afterbirth follow the principles of the natural sciences in which they believe afterbirth will expel naturally. The women who drink the calabaso juice for a short period of time have modified their use of the calabaso juice and are likely closer to leaving the practice behind entirely. Those women who still drink the calabaso juice for two weeks or more are more closely aligned with traditional disease system theory than with biomedical disease system theory.

Conclusions

In her study of women's reproductive health in Oaxaca, Mexico, Carole Browner found that "despite the availability of modern medicines, herbal remedies are strongly preferred for use during all phases of the reproductive cycle and for the treatment of all female reproductive health problems" (Browner 1985b:492). She also emphasized that the preference for traditional remedies is not unique to the community she studied and that throughout much of the developing world there is a preference for traditional medicines (Browner 1985b:492). My research was intended to determine if her statements were true in

Las Minas. I found that even though culture change is occurring and biomedical systems are becoming more and more accessible, components of traditional medical systems are adapting and continue to remain a part of primary health care in Las Minas. This study and similar studies done by other researchers in various regions of the world continue to provide evidence of the importance of medicinal plant use in health care.

There are several reasons why studies on health care, medicinal plants and reproductive health are important. First, good health care is one of the keys to improving the quality of life throughout the world. Second, the use of a combination of medical systems is prevalent in many areas of the world and a better understanding of the interactions between these medical systems will result in more effective health care treatment.

Third, this study is important because of the importance of medicinal plants in health care throughout Latin America and other regions of the world. According to a mid-1990's estimate by the World Health Organization, approximately 3.5 billion people in the developing world utilize plants as components of their primary health care (Balick, Cox 1996: 57-58).

The fourth reason this study is important is because women play an important role in health care all over the world. "Half the world's population is female, and three-quarters of the third world's population is composed of women and children who are still everywhere cared for by women. Women and children are the main users of health services, and women are the main providers of health care-within their families, in biomedical facilities (as nursing and support personnel), and often in traditional health care systems as well (mostly as traditional birth attendants)" (Pizurki, Mejia, Butter, and Ewart 1987 in Turshen 1991:205). Therefore women's health care issues should be studied because of women's important role

in health care. The data from this work in Las Minas clearly supports the contention that botanical remedies still play a vital role in helping women regulate their reproductive health on a daily basis.

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